- 49 -

Claims

1. A method for the production of amphiphile particles having incorporated therein at least one active agent, said method comprising forming a dispersion of particles comprising at least one amphiphilic structuring agent in a solution of at least one active agent, heating said dispersion to an elevated temperature, followed by cooling to around ambient temperature.

- 2. A method as claimed in claim 1 wherein said heating is to a temperature and for a period sufficient to provide, after cooling, an incorporation of active agent into said particles which is at least 130% of the maximum incorporation provided by equilibrating said particles in a solution of at least one active agent at 37°C for up to 3 days.
- 3. A method for increasing the incorporation of at least one active agent into amphiphile particles, above the level achievable by equilibration at 37°C, said method comprising forming a dispersion of particles comprising at least one amphiphilic structuring agent in a solution containing an excess of at least one active agent and heating said dispersion to an elevated temperature, followed by cooling, preferably to around ambient temperature.
- 4. A method as claimed in any of claims 1 to 3 wherein said particles are colloidal.
- 5. A method as claimed in any of claims 1 to 4 wherein said heating is to a temperature in the range 75°C to 200°C.

- 50 -

- 6. A method as claimed in any of claims 1 to 5 wherein said heating is for a period of between 1 minute and 4 hours.
- 7. A method as claimed in any of claims 1 to 6 wherein, prior to loading, at least 75% by volume of said particles are of non-lamellar or micellar phase.
- 8. A method as claimed in any of claims 1 to 7 wherein, after loading, at least 75% by volume of said particles are of non-lamellar or micellar phase.
- 9. A method as claimed in any of claims 1 to 8 wherein, before loading, the equilibrium form of the particles is non-lamellar or micellar.
- 10. A method as claimed in any of claims 1 to 9 additionally comprising drying the amphiphile particles having incorporated therein at least one active agent.
- 11. Amphiphile particles, having incorporated therein at least one active agent, formed by the method of any of claims 1 to 10.
- 12. Amphiphile particles comprising at least one structure forming amphiphile and an active agent, wherein the incorporation of said active agent into said particles is at least 130% of the maximum incorporation provided by incubating equivalent particles not comprising any active agent in a solution of an excess of said active agent at 37°C.
- 13. Amphiphile particles as claimed in claim 11 or claim 12 wherein said structure forming amphiphile is one or more amphiphiles selected from natural lipids,

- 51 -

synthetic lipids, surfactants, and amphiphilic copolymers.

- 14. Amphiphile particles as claimed in any of claims 11 to 13 wherein a portion of said structure forming amphiphile is a fatty acid and/or an oily amphiphile.
- 15. Amphiphile particles as claimed in any of claims 11 to 14 wherein said particles are colloidal.
- 16. Amphiphile particles as claimed in any of claims 11 to 15 wherein the particles are at least 75% by volume non-lamellar or micellar particles or mixtures thereof.
- 17. Amphiphile particles as claimed in any of claims 11 to 16 additionally comprising at least one fragmenting agent.
- 18. Amphiphile particles as claimed in claim 17 wherein said fragmenting agent is a surfactant with a hydrophilic lipophilic balance of at least 12.
- 19. Amphiphile particles as claimed in any of claims 11 to 18 wherein said particles are stable to the loss of said active agent for at least 24 hours at 25°C.
- 20. Amphiphile particles as claimed in any of claims 11 to 19 wherein said particles are stable in terms of particle size for at least 24 hours at 25°C.
- 21. A pharmaceutical composition comprising amphiphile particles as claimed in any of claims 11 to

- 52 -

- 20 and at least one pharmaceutically tollerable carrier or excipient.
- 22. A powder comprising particles as claimed in any of claims 11 to 20, optionally with some or all of the water therein removed.
- 23. A gel of cream comprising particles as claimed in any of claims 11 to 20, optionally with some or all of the water therein removed.